



Subject card

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|---|--|--|-------------------------------------|--|--|---------|-----|
| Subject name and code | Knowledge Bases and Decision Support Systems, PG_00038301 | | | | | | |
| Field of study | Automation, Robotics and Control Systems | | | | | | |
| Date of commencement of studies | October 2022 | Academic year of realisation of subject | | | 2022/2023 | | |
| Education level | second-cycle studies | Subject group | | | | | |
| Mode of study | Part-time studies | Mode of delivery | | | at the university | | |
| Year of study | 1 | Language of instruction | | | Polish | | |
| Semester of study | 2 | ECTS credits | | | 2.0 | | |
| Learning profile | general academic profile | Assessment form | | | assessment | | |
| Conducting unit | Department of Control Engineering -> Faculty of Electrical and Control Engineering | | | | | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Robert Smyk | | | | | |
| | Teachers | dr inż. Robert Smyk | | | | | |
| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
| | Number of study hours | 10.0 | 0.0 | 10.0 | 0.0 | 0.0 | 20 |
| | E-learning hours included: 0.0 | | | | | | |
| Learning activity and number of study hours | Learning activity | Participation in didactic classes included in study plan | Participation in consultation hours | Self-study | SUM | | |
| | Number of study hours | 20 | 6.0 | 24.0 | 50 | | |
| Subject objectives | Acquainting with techniques of extracting information from knowledge bases. Elementary principles of building information systems with a knowledge base. | | | | | | |
| Learning outcomes | Course outcome | Subject outcome | | | Method of verification | | |
| | K7_W05 | The student implements the selected ML method. | | | [SW1] Assessment of factual knowledge | | |
| | K7_U07 | The student implements the selected application functionality. | | | [SU1] Assessment of task fulfilment | | |
| | K7_W02 | The student performs a design task in a specific scope. | | | [SW3] Assessment of knowledge contained in written work and projects | | |
| | K7_U10 | The student knows selected classification algorithms. | | | [SU2] Assessment of ability to analyse information | | |
| K7_K06 | The student knows the basic principle of developing a dataset | | | [SK5] Assessment of ability to solve problems that arise in practice | | | |
| Subject contents | 1. Introduction to SWD: basic general issues, discussion where to get the data, where to store it, how to process it? 2. Data Acquisition: webscraping 3. Parsing-processing of JSON / XML data 4. Non-relational data container, such as Mongo DB 5. Building a model: data classification, property extraction 6. Building the model: algorytmy ML, fuzzy logic 7. Processing of linguistic data, NLP 8. Conclusion: building the application interface in web technology | | | | | | |
| Prerequisites and co-requisites | He knows the basic calculation methods in the field of numerical methods. Has basic programming skills in a selected high-level language. | | | | | | |
| Assessment methods and criteria | Subject passing criteria | Passing threshold | | | Percentage of the final grade | | |
| | carrying out tasks during classes | 50.0% | | | 50.0% | | |
| | project | 50.0% | | | 50.0% | | |

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| Recommended reading | Basic literature | <p>1. Richert, Willi. <i>Building machine learning systems with Python</i>. Packt Publishing Ltd, 2013.</p> <p>2. Dasgupta, Nataraj. <i>Practical big data analytics: Hands-on techniques to implement enterprise analytics and machine learning using Hadoop, Spark, NoSQL and R</i>. Packt Publishing Ltd, 2018.</p> <p>3. Ploetz, Aaron, et al. <i>Seven NoSQL Databases in a Week: Get up and running with the fundamentals and functionalities of seven of the most popular NoSQL databases</i>. Packt Publishing, 2018.</p> |
| | Supplementary literature | <p>1. Towards data science, https://towardsdatascience.com/, 2022</p> <p>2. Kaggle, https://www.kaggle.com/, 2022</p> |
| | eResources addresses | Adresy na platformie eNauzanie: |
| Example issues/ example questions/ tasks being completed | <p>Suggest a data storage container for loose structure documents.</p> <p>Suggest an algorithm for classifying unstructured data.</p> | |
| Work placement | Not applicable | |